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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/510,555

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Andrew James Goodwin

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EXAMINER

SELLMAN, CACHET I

ART UNIT

PAPER NUMBER

1792

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/510,555	<b>Applicant(s)</b> GOODWIN ET AL.	
	<b>Examiner</b> CACHET I. SELLMAN	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 32,35-37,39-45 and 47-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32, 35-37, 39-45, and 47-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Allowable Subject Matter*

1. The indicated allowability of claims 32, 35-37, 39-45 and 47-51 is withdrawn in view a different interpretation of the previously applied art. Rejections based on the cited reference(s) follow.

### *Claim Rejections - 35 USC § 103*

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanisaki et al. in view of Kolluri and Lickfield.

Tanisaki et al. teaches a method for treating a powder using a plasma reactor under atmospheric pressure. The process comprises introducing a monomer gas into the reaction chamber (col. 4, lines 20-54 and Fig. 1) and separately transporting the powder substrate to be coated into the atmospheric discharge (col. 3, lines 52-66) and exposing the powdered substrate to the monomer gas. The material is directly injected (see Figures).

Tanisaki et al. fails to teach atomizing the liquid coating forming material as required by **claim 32**.

Kolluri discloses a monomer delivery system that is used for a chemical vapor deposition apparatus, which comprises at least one ultrasonic atomizing nozzle for supplying a vaporized liquid monomer to the reaction to deposit a film on a substrate

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(abstract). Kolluri's process provided a substantially uniform atomize mist at a precise and controlled rate to the chamber and deposits uniform coatings on all sizes of substrates without the need for expensive or complex arrangements (see page 3, lines 12-17). Kolluri states that the uniformity of the coating can be achieved on stationary or moving substrates (see page 7, line 5). Kolluri shows that the coating can be applied to films, fabrics, or webs (see page 7, line 28-30).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process of Tanisaki et al. to include the monomer delivery system of Kolluri. One would have been motivated to do so because both disclose process where a film is formed on a substrate using a vaporized monomer and Kolluri further teaches using the ultrasonic atomizing nozzle provides a substantially uniform atomized mist at a precise and controlled rate to the chamber and deposits uniform coatings on all sizes of substrates without the need for expensive or complex arrangements.

It is well known in the art to transport particles such as pigments and those material being contained in the Tanisaki reference using a web especially if the coated particles are being applied to some form of paper especially the white pigments it would reduce the need to remove the powdered substrate and they applying it to the paper substrate and etc. Kolluri shows an embodiment wherein a nonwoven material is moved through the chamber and therefore one having ordinary skill in the art would have a reasonable expectation of success of using a nonwoven web to transport the powdered material through the chamber of Kolluri.

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Lickfield et al. teaches a process where nonwoven fabrics of a first and second nonwoven web has a powdered layer sandwiched between and barrier layer formed onto (column 2, lines 56-column 3, lines 11-18).

It would have been obvious to one having ordinary skill in the art to modify the process of Goodwin et al. to include the use of a the nonwoven fabric of Lickfield et al. because both disclose process of coating a powdered substrate using a reel to reel process and Tanisaki modified by Kolluri et al. teaches that the process can be used to coat nonwoven webs as well as powdered substrates therefore one would have a reasonable expectation of success in coating the substrate.

The powdered substrate can be metal oxides, dystuffs, metals, silicas and silicates (see col. 4, line 55 - col. 5, line 22) as required by claim 35.

As to claims 36, 37, 44 and 45, Kolluri et al discloses a plasma assembly comprising a first pair of vertically arrayed, parallel spaced apart planar electrodes (78, 78).

4. Claims 40, 41, 48 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanisaki et al. in view of Kolluri and Lickfield as applied to claim 32 above and in further view of Roth et al. (US 5414324).

The teachings of Tanisaki et al. in view of Kolluri and Lickfield as applied to claim 32 are as stated above.

Kolluri discloses a first pair of vertically arrayed, parallel spaced apart planar electrodes (78) where the spacing between the electrodes of the pair forms a first plasma region. Kolluri does not state that there is a second pair of parallel spaced apart

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electrodes which forms a second plasma region. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the first pair of vertical parallel electrodes to obtain pairs in series for the predictable results of providing additional plasma generation zones for further processing of the substrate. It has been held that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 274 F.2d, 124 USPQ 378 (CCPA 1960).

Kolluri also fail to teach that at least one dielectric plate is placed between the pair of electrodes as required by claims 40 and 48.

Roth teaches that planar metallic electrodes should be covered with dielectric plates on all sides (see col. 3, lines 31-49). Therefore, it would have been obvious to one having ordinary skill in the art to further modify the two pairs of electrodes taught by Kolluri to have each side of the electrode covered with a dielectric plate. One would have been motivated to do so because Roth teaches the dielectric plate prevents electrical arcing of the electrode plates (see col. 3, lines 31-49).

As to claims 41 and 49, the electrodes are vertically placed as taught by Kolluri.

5. Claims rejected under 35 U.S.C. 103(a) as being unpatentable over Tanisaki et al. in view of Kolluri, Lickfield and Roth as applied above and in further view of Rickerby et al. (US 6176982).

The teachings of Tanisaki et al. in view of Kolluri, Lickfield and Roth are as stated above. The references fail to teach the electrode is in the form of a watertight box having a side formed of a dielectric plate having bonded to the interior of the box a

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planar electrode with a liquid inlet adapted to spray water or an aqueous solution on the face of the planar electrode as required by claims 42-43 and 50-51.

Rickerby et al. discloses an electrode unit in the form of a watertight box, having a side formed by an interior-facing plate 46 (same as dielectric plate taught by Roth) by having bonded thereto, on the interior of the box an electrode 38, wherein a cooling liquid distribution system comprising a liquid inlet 50 directs water onto the exterior of the electrode cover (see Fig. 3, col. 5, lines 21-57).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of Tanisaki et al. as modified above to have the electrode unit as described by Rickerby et al. in order to allow water to be circulated against the inner wall of the electrode, preventing overheating of the electrode (see col. 5, lines 49-52).

As to claims 39, and 47, it is well known in the art to use either planar or concentric electrodes. Rickerby et al. discloses the use of concentric electrodes which are a well known alternative type of electrode and interchanging the two would have been obvious.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CACHET I. SELLMAN whose telephone number is (571)272-0691. The examiner can normally be reached on Monday through Friday, 7:00 - 4:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cachet I Sellman  
Examiner  
Art Unit 1792

/C. I. S./  
Examiner, Art Unit 1792

/William Phillip Fletcher III/  
Primary Examiner, Art Unit 1792